

Amendments to the Claims

1. (Previously amended): A water-based drilling fluid comprising:
 - a) a polymer latex capable of providing a deformable latex film on at least a portion of a subterranean formation;
 - b) water; and
 - c) at least one precipitating agent selected from the group consisting of aluminum complexes.
2. (Original): The water-based drilling fluid of claim 1 where the water comprises salt.
3. (Previously amended): The water-based drilling fluid of claim 1 where the precipitating agent further comprises a silicate.
4. (Original): The water-based drilling fluid of claim 1 further comprising a surfactant.
5. (Currently amended): A water-based drilling fluid comprising:
 - o a polymer latex;
 - o a precipitating agent; and
 - o water a saturated salt brine.
6. (Cancelled)
7. (Original): The water-based drilling fluid of claim 5 further comprising a surfactant.
8. (Currently amended): A water-based drilling fluid comprising:
 - a) a polymer latex capable of providing a deformable latex film on at least a portion of a subterranean formation;

- b) a precipitating agent selected from the group consisting of aluminum complexes;
- c) a surfactant; and
- d) water.

9. (Original): The water-based drilling fluid of claim 8 where the water comprises salt.

10. (Previously amended) The water-based drilling fluid of claim 9 where the salt is selected from the group consisting of calcium chloride, sodium chloride, potassium chloride, magnesium chloride, calcium bromide, sodium bromide, potassium bromide, calcium nitrate, sodium formate, potassium formate, cesium formate, and mixtures thereof.

11. (Original): The water-based drilling fluid of claim 8 where the polymer latex is capable of providing a deformable latex seal on at least a portion of a subterranean formation and is selected from the group consisting of polymethyl methacrylate, polyethylene, carboxylated styrene/butadiene copolymer, polyvinylacetate copolymer, polyvinyl acetate/vinyl chloride/ethylene copolymer, polyvinyl acetate/ethylene copolymer, natural latex, polyisoprene, polydimethylsiloxane, and mixtures thereof.

12. (Amended) The water-based drilling fluid of claim 8 where the precipitating agent further comprises a silicate.

13. (Cancelled)

14. (Original): The water-based drilling fluid of claim 8 where the polymer latex is present in the drilling fluid in an amount of from about 0.1 to about 10 volume% based on the total water-based drilling fluid.

15. (Original): The water-based drilling fluid of claim 8 where the precipitating agent is present in the drilling fluid in an amount of from about 0.25 to about 20 lb/bbl based on the total water-based drilling fluid.

16. (Original): The water-based drilling fluid of claim 8 where the surfactant is present in the drilling fluid in an amount of from about 0.005 to about 2 wt.% based on the total water-based drilling fluid.

17. (Original): The water-based drilling fluid of claim 9 where the salt is present in the drilling fluid in an amount of from about 1 wt.% to about saturation based on the total water-based drilling fluid.

18. (Original): The water-based drilling fluid of claim 8 where polymer latex comprises particles that average less than 1 micron in size.

19. (Original): A water-based drilling fluid comprising:

- a) from about 1 to about 10 volume% of a polymer latex selected from the group consisting of polymethyl methacrylate, polyethylene, carboxylated styrene/butadiene copolymer, polyvinylacetate copolymer, polyvinyl acetate/vinyl chloride/ethylene copolymer, polyvinyl acetate/ethylene copolymer, natural latex, polyisoprene, polydimethylsiloxane, and mixtures thereof;
- b) from about 0.25 to about 20 lb/bbl of a precipitating agent selected from the group consisting of silicates, aluminum complexes, and mixtures thereof;
- c) at least 1 wt.% of a salt selected from the group consisting of calcium chloride, sodium chloride, potassium chloride, magnesium chloride, calcium bromide, sodium bromide, potassium bromide, calcium nitrate, sodium formate, potassium formate, cesium formate, and mixtures thereof;

- d) from about 0.005 to about 2 vol.% of a surfactant selected from the group consisting of betaines, alkali metal alkylene acetates, sultaines, ether carboxylates, and mixtures thereof; and
- e) water making up the balance,

where the proportions are based on the total water-based drilling fluid.

20. (Previously amended): A method of inhibiting borehole wall invasion when drilling with a water-based drilling fluid in a subterranean formation, the method comprising:

- a) providing a water-based drilling fluid comprising:
 - i) a polymer latex capable of providing a deformable latex seal on at least a portion of a subterranean formation;
 - ii) water; and
 - iii) at least one precipitating agent selected from the group consisting of aluminum complexes; and
- b) circulating the water-based drilling fluid in contact with a borehole wall.

21. (Original): The method of claim 20 where in providing the water-based drilling fluid, the water comprises salt.

22. (Previously amended): The method of claim 20 where in providing the water-based drilling fluid, the precipitating agent further comprises a silicate.

23. (Original): The method of claim 20 where in providing the water-based drilling fluid, the fluid further comprises a surfactant.

24. (Previously amended): A method of inhibiting borehole wall invasion when drilling with a water-based drilling fluid in a subterranean formation, the method comprising:

- a) providing a water-based drilling fluid comprising:
 - i) a polymer latex;

- ii) a precipitating agent selected from the group consisting of aluminum complexes; and
 - iii) water; and
- b) circulating the water-based drilling fluid in contact with a borehole wall.

25. (Original): The method of claim 24 where in providing the water-based drilling fluid, the water comprises salt and is a saturated salt brine.

26. (Original): The method of claim 24 where in providing the water-based drilling fluid, the water-based drilling fluid further comprises a surfactant.

27. (Previously amended): A method of inhibiting borehole wall invasion when drilling with a water-based drilling fluid in a subterranean formation, the method comprising:

- a) providing a water-based drilling fluid comprising:
 - i) a polymer latex;
 - ii) a precipitating agent selected from the group consisting of aluminum complexes;
 - iii) a surfactant; and
 - iv) water; and
- b) circulating the water-based drilling fluid in contact with a borehole wall.

28. (Original): The method of claim 27 where in providing the water-based drilling fluid, the water comprises salt.

29. (Original): The method of claim 28 where the salt is selected from the group consisting of calcium chloride, sodium chloride, potassium chloride, magnesium chloride, calcium bromide, sodium bromide, potassium bromide, calcium nitrate, sodium formate, potassium formate, cesium formate, and mixtures thereof.

30. (Original): The method of claim 27 where in providing the water-based drilling fluid, the polymer latex is capable of providing a deformable latex seal on at least a portion of a subterranean formation and is selected from the group consisting of polymethyl methacrylate, polyethylene, carboxylated styrene/butadiene copolymer, polyvinylacetate copolymer, polyvinyl acetate/vinyl chloride/ethylene copolymer, polyvinyl acetate/ethylene copolymer, natural latex, polyisoprene, polydimethylsiloxane, and mixtures thereof.

31. (Previously amended): The method of claim 27 where in providing the water-based drilling fluid, the precipitating agent further comprises a silicate.

32. (Cancelled)

33. (Original): The method of claim 27 where in providing the water-based drilling fluid, the polymer latex is present in the drilling fluid in an amount of from about 0.1 to about 10 vol.% based on the total water-based drilling fluid.

34. (Original): The method of claim 27 where in providing the water-based drilling fluid, the precipitating agent is present in the drilling fluid in an amount of from about 0.25 to about 20 lb/bbl based on the total water-based drilling fluid.

35. (Original): The method of claim 27 where in providing the water-based drilling fluid, the surfactant is present in the drilling fluid in an amount of from about 0.005 to about 2 vol.% based on the total water-based drilling fluid.

36. (Original): The method of claim 28 where the salt is present in the drilling fluid in an amount of from about 1 wt.% to about saturation based on the total water-based drilling fluid.

37. (Original): The method of claim 27 where in providing the water-based drilling fluid, the polymer latex comprises particles that average less than 1 micron in size.

38. (Previously amended): A method of inhibiting borehole wall invasion when drilling with a water-based drilling fluid in a subterranean formation, the method comprising:

- a) providing a water-based drilling fluid comprising:
 - i) from about 0.1 to about 10 vol.% of a polymer latex selected from the group consisting of polymethyl methacrylate, polyethylene, carboxylated styrene/butadiene copolymer, polyvinylacetate copolymer, polyvinyl acetate/vinyl chloride/ethylene copolymer, polyvinyl acetate/ethylene copolymer, natural latex, polyisoprene, polydimethylsiloxane, and mixtures thereof;
 - ii) from about 0.25 to about 20 lb/bbl of a precipitating agent selected from the group consisting of silicates, aluminum complexes, and mixtures thereof;
 - iii) at least 1 wt.% of a salt selected from the group consisting of calcium chloride, sodium chloride, potassium chloride, magnesium chloride, calcium bromide, sodium bromide, potassium bromide, calcium nitrate, sodium formate, potassium formate, cesium formate, and mixtures thereof;
 - iv) from about 0.005 to about 2 vol.% of a surfactant selected from the group consisting of betaines, alkali metal alkylene acetates, sultaines, ether carboxylates, and mixtures thereof; and
 - v) water making up the balance,

where the proportions are based on the total water-based drilling fluid; and

- b) circulating the water-based drilling fluid in contact with a borehole wall.

39. (Previously added): A water-based drilling fluid comprising:

- a) a polymer latex;
- b) a precipitating agent;

- c) a surfactant, where the surfactant is selected from the group consisting of betaines, alkali metal alkylene acetates, sultaines, ether carboxylates, and mixtures thereof; and
- d) water.

40. (Previously added): A method of inhibiting borehole wall invasion when drilling with a water-based drilling fluid in a subterranean formation, the method comprising:

- a) providing a water-based drilling fluid comprising:
 - i) a polymer latex;
 - ii) a precipitating agent;
 - iii) a surfactant, where the surfactant is selected from the group consisting of betaines, alkali metal alkylene acetates, sultaines, ether carboxylates, and mixtures thereof; and
 - iv) water; and
- b) circulating the water-based drilling fluid in contact with a borehole wall.